		Pushing the Env	relope
		2009 Science	e
		Academic Stand	dards
Minnesota Science			
Grade 5			
Activity/Lesson	State	Standards	
Types of Engines (pgs. 11-23)	MN	SCI.5.5.2.2.1.2	Physical Science: Motion: Identify the force that starts something moving or changes its speed or direction of motion.
Physics and Math (pgs. 43-63)	MN	SCI.5.5.2.2.1.2	Physical Science: Motion: Identify the force that starts something moving or changes its speed or direction of motion.
Physics and Math (pgs. 43-63)	MN	SCI.5.5.2.2.1.3	Physical Science: Motion: Demonstrate that a greater force on an object can produce a greater change in motion.
Rocket Activity (pgs. 69-75)	MN	SCI.5.5.2.2.1.2	Physical Science: Motion: Identify the force that starts something moving or changes its speed or direction of motion.
Rocket Activity (pgs. 69-75)	MN	SCI.5.5.2.2.1.3	Physical Science: Motion: Demonstrate that a greater force on an object can produce a greater change in motion.
		Pushing the Env	volono
		2009 Science	
		Academic Stand	
Minnesota Science		Academic Stand	
Grade 6			
Activity/Lesson	State	Standards	
Types of Engines (Physical Science: Motion: Recognize that when the forces acting on an object are balanced, the object remains at rest or continues to move at a constant speed in a straight line, and that unbalanced forces cause a change in the speed
pgs. 11-23)	MN	SCI.6.6.2.2.2.1	or direction of the motion of an object. Physical Science: Motion: Recognize that when the forces acting on an object are balanced, the object remains at rest or continues to move at a constant speed in a straight line, and that
Physics and Math (pgs. 43-63)	MN	SCI.6.6.2.2.2.1	unbalanced forces cause a change in the speed or direction of the motion of an object.
Physics and Math (pgs. 43-63)	MN	SCI.6.6.2.2.2.2	Physical Science: Motion: Identify the forces acting on an object and describe how the sum of the forces affects the motion of the object.
Rocket Activity (pgs. 69-75)	MN	SCI.6.6.2.2.2.1	Physical Science: Motion: Recognize that when the forces acting on an object are balanced, the object remains at rest or continues to move at a constant speed in a straight line, and that unbalanced forces cause a change in the speed or direction of the motion of an object. Physical Science: Motion: Identify the forces
Rocket Activity (pgs. 69-75)	MN	SCI.6.6.2.2.2.2	acting on an object and describe how the sum of the forces affects the motion of the object.

		Pushing the Env	
		2009 Science Academic Stand	
Minnocoto Coiones		Academic Stand	aaras
Minnesota Science Grade 7			
Activity/Lesson	State	Standards	
Activity/Lesson	State	Standards	Physical Science: Matter: Recognize that a
			chemical equation describes a reaction where
			pure substances change to produce one or
Chemistry (pgs. 25-			more pure substances whose properties are
41)	MN	SCI.7.7.2.1.1.3	different from the original substance(s).
+ 1)	IVIIN	301.7.7.2.1.1.3	different from the original substance(s).
		Pushing the Env	velone
		2009 Science	
		Academic Stand	
Minnesota Science		Academic Otan	
Grade 8			
Activity/Lesson	State	Standards	
rouvity/2000011	Otato	Otanaarao	Describe examples of important contributions to
			the advancement of science, engineering and
			technology made by individuals representing
History of Aviation			different groups and cultures at different times in
Propulsion (pgs. 5-9)	MN	SCI.8.8.1.3.2.1	history.
r ropaloion (pgc. c c)	1711.4	001.0.0.1.0.2.1	Thotory.
		Pushing the Env	velope
		2009 Science	
		Academic Stand	
Minnesota Science			
Grades 9-12			
Activity/Lesson	State	Standards	
			Physical Science: Matter: Explain how the
Chemistry (pgs. 25-		SCI.9-	rearrangement of atoms in a chemical reaction
41)	MN	12.9.2.1.2.2	illustrates the law of conservation of mass.
Chemistry (pgs. 25-		SCI.9-	Physical Science: Matter: Describe a chemical
41)	MN	12.9.2.1.2.3	reaction using words and symbolic equations.
·			Physical Science: Motion: Explain and calculate
Physics and Math		SCI.9-	the acceleration of an object subjected to a set
(pgs. 43-63)	MN	12.9.2.2.2	of forces in one dimension (F = ma).
			Physical Science: Motion: Demonstrate that
			whenever one object exerts force on another, a
			force equal in magnitude and opposite in
Physics and Math		SCI.9-	direction is exerted by the second object back
(pgs. 43-63)	MN	12.9.2.2.3	on the first object.
			Physical Science: Motion: Explain and calculate
Rocket Activity (pgs.		SCI.9-	the acceleration of an object subjected to a set
69-75)	MN	12.9.2.2.2	of forces in one dimension (F = ma).
•			Physical Science: Motion: Demonstrate that
			whenever one object exerts force on another, a
			force equal in magnitude and opposite in
		SCI.9-	direction is exerted by the second object back
Rocket Activity (pas		1001.9-	MILECTION IS EVELIED BY THE SECOND ODIECT DACK
Rocket Activity (pgs. 69-75)	MN	12.9.2.2.2.3	on the first object.

2009 Science Academic Standards					
Grades 9-12 (Physic	s)				
Activity/Lesson	State	Standards			
			Physical Science: Motion: Describe and		
			calculate the change in velocity for objects when		
Types of Engines (SCI.9-	forces are applied perpendicular to the direction		
pgs. 11-23)	MN	12.9P.2.2.2.2	of motion.		
			Physical Science: Motion: Use vectors and free-		
			body diagrams to describe force, position,		
Physics and Math		SCI.9-	velocity and acceleration of objects in two-		
(pgs. 43-63)	MN	12.9P.2.2.1.1	dimensional space.		
			Physical Science: Motion: Apply Newton's three		
Physics and Math		SCI.9-	laws of motion to calculate and analyze the		
(pgs. 43-63)	MN	12.9P.2.2.1.2	effect of forces and momentum on motion.		
			Physical Science: Motion: Describe and		
			calculate the change in velocity for objects when		
Physics and Math		SCI.9-	forces are applied perpendicular to the direction		
(pgs. 43-63)	MN	12.9P.2.2.2.2	of motion.		
			Physical Science: Motion: Use vectors and free-		
			body diagrams to describe force, position,		
Rocket Activity (pgs.		SCI.9-	velocity and acceleration of objects in two-		
69-75)	MN	12.9P.2.2.1.1	dimensional space.		
			Physical Science: Motion: Apply Newton's three		
Rocket Activity (pgs.		SCI.9-	laws of motion to calculate and analyze the		
69-75)	MN	12.9P.2.2.1.2	effect of forces and momentum on motion.		
			Physical Science: Motion: Describe and		
			calculate the change in velocity for objects when		
Rocket Activity (pgs.		SCI.9-	forces are applied perpendicular to the direction		
69-75)	MN	12.9P.2.2.2.2	of motion.		